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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Bonnie B. Sandel et al.	Docket:	102289-100
Serial No.:	10/722,928	Art Unit:	1611
Filed:	November 26, 2003	Examiner:	Frazier, Barbara S.
Assignee:	Arch Chemicals, Inc.	Conf. No.	1181
Title:	ANTIMICROBIAL PROTECTION FOR PLASTIC STRUCTURES		

CERTIFICATE OF MAILING OR TRANSMISSION (37 CFR 1.8(a))

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December 15, 2009 Signed: _____
Wanli Wu

REPLY BRIEF FOR BONNIE B. SANDEL ET AL.

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Responsive to the Examiner's Answer mailed October 15, 2009 in the above-identified application, having a shortened statutory period for response expiring on December 15, 2009, Appellants take issue with certain points raised therein.

Specifically, it is stated at page 8, last sentence of the Examiner's Answer, that "[o]ne skilled in the art would find it obvious to apply the step of adding the potentiator, i.e., an anti-microbial agent (biocide) capable of bonding to the metal ion (see col. 4, lines 56-59 of Lyon et al), as taught by Lyon et al. to the substrate of Laver, since the substrate of Laver is already a mixed material which contains a metal ion bound to a polymer (e.g., see the preferred

formulation of Laver at col. 7, lines 60-col. 8, line 7)." This statement is believed to be misplaced for several reasons:

First, nowhere does Laver disclose or suggest that the patentee's substrate contains a metal ion bound to a polymer. On the contrary, the preferred formulation cited in the Examiner's Answer, i.e., col. 4, lines 56-59, as well the recipe shown at col. 7, lines 50-60 of Laver indicates that the substrate of Laver contains zinc stearate, which is a zinc salt, not a zinc ion bound to a polymer.

Further, there is no disclosure or suggestion in Laver that any polymers present in the compositions disclosed in Laver would transchelate with zinc stearate to form a zinc-polymer complex. Indeed, any formation of such a complex would defeat the purpose of the patentee for using zinc stearate as a lubricant.

Second, although Laver discloses that the mixture used to make the extruded product may contain around 2% of zinc stearate, there is no disclose or suggestion in Laver that **after the product is formed**, how much, if any, zinc stearate is available to react or chelate with another chemical. Accordingly, there is no reasonable expectation of success by treating the extruded product disclosed in Laver with the potentiator disclosed in Lyon et al. because Laver does not disclose or suggest that any zinc stearate, which is used in the mixture as a lubricant to make extruded product, is available in the formed product to chelate or react with the potentiator disclosed in Lyon et al.

Third, even assuming that zinc stearate is available to chelate or react with another chemical in Laver's extruded product, Appellant submits that it is not, one skilled in the art would still apply the Lyon et al. process as a whole to the formed product disclosed by Laver to obtain sustained antimicrobial protection to the product.

Lyon et al. discloses the following at column 4, lines 56-65:

> After the article is dried, it is preferably treated with another solution containing a potentiator. "Potentiator" as used herein refers to an anti-microbial agent capable of bonding to the metal ion. It should be noted

> that the selection of potentiator is dependent upon the coordination chemistry of the metal ion. For example, if the bonds between the chelating polymer and the metal ion can be completely displaced by a potentiator, the durability of the complex within the chelating polymer can be comprised. Thus, the use of such a potentiator would not be desirable.

From this disclosure, one skilled in the art would appreciate that Lyon et al. teaches that in order to achieve a long-lasting anti-microbial efficacy, it is necessary for the potentiator required by that reference to only partially displace the bonds between the chelating polymer and the metal ion. (see col. 4, lines 65 of Lyon et al.) One of ordinary skill in the art would also appreciate that one of the purposes for such partial displacement is to use the chelating polymer as an anchor to immobilize the potentiator to the surface of the article.

Since there are no chelating polymers present in the Laver composition, contacting zinc stearate with a potentiator would not cause any potentiator-metal ion-chelating polymer to form. And since zinc stearate is a lubricant, it is counterintuitive to use it as an anchor to immobilize any potentiator. Therefore, to obtain a sustained antimicrobial protection to a substrate as taught in Lyon et al., one skilled in the art would be deposit a metal ion-chelating polymer complex on the product after the product is formed to facilitate the formation of a potentiatior-metal ion-chelating polymer complex. In other words, one would apply the Lyon et al. process as a whole to the composite disclosed by Laver. Such an application of the teachings of those references is not suggestive of the instantly claimed process.

It is Appellants' position that absent hindsight reasoning with full knowledge of the present invention, the presently claimed process is neither disclosed nor suggested by the cited prior art references, alone or in combination.

Reversal by the Board of the outstanding rejections of the instant claims is respectfully requested. No additional fee is believed to be required; however, if there is any fee, please charge deposit account # **23-1665** under Customer Number **27267**.

Respectfully submitted for
Bonnie B. Sandel et al.

Date: December 15, 2009

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